

CLAIMS

What is claimed is:

1. A compressor housing comprising:
a first port opening positioned at a location downstream from a
5 compressor wheel;
a second port opening positioned at a location adjacent to a blade of
the compressor wheel; and
a third port opening positioned at a location upstream from the
compressor wheel wherein the first port opening and the third port opening
10 define a first flow path and wherein a second flow path extending from the
second port opening meets the first flow path at a confluence.
2. The compressor housing of claim 1, wherein the first flow
path includes a venturi section, wherein the confluence optionally coincides
15 at least in part with the venturi section and wherein the venturi section
optionally comprises a cross-sectional area less than a cross-sectional area
of a portion of the first flow path located between the venturi section and
the first port opening.
- 20 3. The compressor housing of claim 1, further comprising one or
more valves positioned to control flow along one or more of the first flow
path and second flow path.

4. The compressor housing of claim 1, wherein the second flow path forms an angle of greater than 90° with respect to the first flow path at the confluence, wherein 0° corresponds approximately to an intended direction of flow along the first flow path and wherein the angle is
5 measured counter-clockwise from 0° .

5. A port comprising:
a first port opening positioned at a location downstream from a compressor wheel;
10 a second port opening positioned at a location adjacent to a blade of the compressor wheel; and
a third port opening positioned at a location upstream from the compressor wheel wherein the first port opening and the third port opening define a first flow path and wherein a second flow path extending from the
15 second port opening meets the first flow path at a confluence.

6. The port of claim 5, wherein the first flow path includes a venturi section and wherein the confluence optionally coincides at least in part with the venturi section.
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7. The port of claim 5, further comprising one or more valves positioned to control flow along one or more of the first flow path and second flow path.

8. A method comprising:

providing a compressor wheel with power from an exhaust turbine;
compressing gas using the compressor wheel;

5 re-circulating a portion of the gas from a location downstream from
the compressor wheel, through a venturi, and to a location upstream from
the compressor wheel.

9. The method of claim 8, further comprising re-circulating an

10 additional portion of the gas from a location downstream to a blade of the
compressor wheel to the location upstream from the compressor wheel
wherein the portion and the additional portion of the gas optionally meet at
a confluence prior to the location upstream from the compressor wheel and
optionally further comprising adjusting a valve positioned between the
15 location radially adjacent to the compressor wheel and the confluence to
control the re-circulating.

10. The method of claim 8, further comprising adjusting a valve

positioned between the location downstream from the compressor wheel
20 and the location upstream from the compressor wheel to control the re-
circulating.